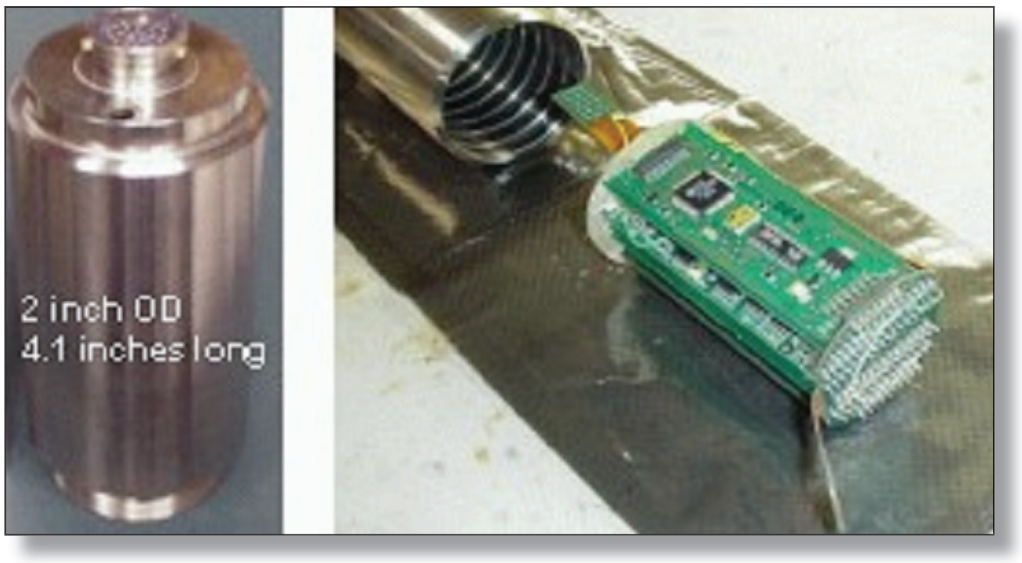
Air Force Research Laboratory|AFRL

Science and Technology for Tomorrow's Air and Space Force

Success Story

LOW-COST ALL-ELECTRONIC PENETRATION FUZE EXCEEDS PENETRATION TESTING OBJECTIVES



Fuzes that survive high impact conditions increase the ability of penetrating munitions to defeat underground bunkers. The Multiple Event Hard Target Fuze (MEHTF) provides an accurate and low-cost solution to fuzing for hard target defeat.

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Accomplishment

The Munitions Directorate developed the first low-cost, all-electronic penetration fuze with an improved ability over existing fuzes to survive rigid body deceleration shock. The MEHTF smart penetrator fuze uses an accelerometer to measure distance traveled in order to initiate weapon activation at the desired depth. Directorate engineers also demonstrated control of multiple fuzes for multiple warhead events through static testing.

Background

The directorate initiated the MEHTF program to address anticipated fuzing needs for future penetrating weapons. Directorate researchers identified several future applications requiring a smart penetration fuze.

Directorate engineers identified specific technology limitations and structured the program to address these limitations. These limitations include (1) surviving the severe shock environment associated with high-speed penetrator impact, (2) reduced fuze size to facilitate use in small penetrators, (3) low cost to be competitive with time-delay fuzing, (4) accurate target media discrimination capability, and (5) providing a multiple-event capability for complex multiple-function warheads.

Munitions
Emerging Technologies

Additional information

To receive more information about this or other activities in the Air Force Research Laboratory, contact TECH CONNECT, AFRL/XPTC, (800) 203-6451 and you will be directed to the appropriate laboratory expert. (03-MN-03)